

## CLAIMS

1. A light emitting display device comprising:  
a gate electrode provided formed over a substrate having an insulating surface  
5 with a substance having a photocatalytic function therebetween;  
a gate insulating layer formed over the gate electrode;  
a semiconductor layer and a first electrode formed over the gate insulating  
layer;  
a wiring layer formed over the semiconductor layer;  
10 a partition wall covering an edge portion of the first electrode and the wiring  
layer;  
an electroluminescent layer over the first electrode; and  
a second electrode over the electroluminescent layer,  
wherein the wiring layer covers the edge portion of the first electrode.  
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2. A light emitting display device comprising:  
a wiring layer and a first electrode formed over a substrate having an insulating  
surface with a substance having a photocatalytic function therebetween;  
a semiconductor layer formed over the wiring layer;  
20 a gate insulating layer formed over the semiconductor layer;  
a gate electrode formed over the gate insulating layer;  
a partition wall covering an edge portion of the first electrode and the wiring  
layer;  
an electroluminescent layer over the first electrode; and  
25 a second electrode over the electroluminescent layer,  
wherein the wiring layer covers the edge portion of the first electrode.
3. A light emitting display device comprising:  
a gate electrode formed over a substrate having an insulating surface with a  
30 substance having a photocatalytic function therebetween;

a gate insulating layer formed over the gate electrode;  
a semiconductor layer and a first electrode formed over the gate insulating layer;  
a wiring layer formed over the semiconductor layer;  
5 a partition wall covering an edge portion of the first electrode and the wiring layer;  
an electroluminescent layer over the first electrode; and  
a second electrode over the electroluminescent layer,  
wherein the first electrode covers an edge portion of the wiring layer.

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4. A light emitting display device comprising:

a wiring layer and a first electrode formed over a substrate having an insulating surface with a substance having a photocatalytic function therebetween;  
a semiconductor layer formed over the wiring layer;  
15 a gate insulating layer formed over the semiconductor layer;  
a gate electrode formed over the gate insulating layer;  
a partition wall covering an edge portion of the first electrode and the wiring layer;  
an electroluminescent layer over the first electrode; and  
20 a second electrode over the electroluminescent layer,  
wherein the first electrode covers an edge portion of the wiring layer.

5. A light emitting display device according to any one of claims 1 to 4,  
wherein the substance having a photocatalytic function comprises titanium oxide.

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6. A light emitting display device comprising:

a conductive layer including a refractory metal over a substrate having an insulating surface;  
a gate electrode formed over the conductive layer;  
30 a gate insulating layer formed over the gate electrode;

a semiconductor layer and a first electrode formed over the gate insulating layer;

a wiring layer formed over the semiconductor layer;

5 a partition wall covering an edge portion of the first electrode and the wiring layer;

an electroluminescent layer over the first electrode; and

a second electrode over the electroluminescent layer,

wherein the wiring layer covers the edge portion of the first electrode.

10 7. A light emitting display device comprising:

a conductive layer including a refractory metal over a substrate having an insulating surface;

a wiring layer and a first electrode formed over the conductive layer;

a semiconductor layer formed over the wiring layer;

15 a gate insulating layer formed over the semiconductor layer;

a gate electrode formed over the gate insulating layer;

a partition wall covering an edge portion of the first electrode and the wiring layer;

an electroluminescent layer over the first electrode; and

20 a second electrode over the electroluminescent layer,

wherein the wiring layer covers the edge portion of the first electrode.

8. A light emitting display device comprising:

25 a conductive layer including a refractory metal over a substrate having an insulating surface;

a gate electrode formed over the conductive layer;

a gate insulating layer formed over the gate electrode;

a semiconductor layer and a first electrode formed over the gate insulating layer;

30 a wiring layer formed over the semiconductor layer;

a partition wall covering an edge portion of the first electrode and the wiring layer;

an electroluminescent layer over the first electrode; and

a second electrode over the electroluminescent layer,

5 wherein the first electrode covers an edge portion of the wiring layer.

9. A light emitting display device comprising:

a conductive layer including a refractory metal over a substrate having an insulating surface;

10 a wiring layer and a first electrode formed over the conductive layer;

a semiconductor layer formed over the wiring layer;

a gate insulating layer formed over the semiconductor layer;

a gate electrode formed over the gate insulating layer;

15 a partition wall covering an edge portion of the first electrode and the wiring layer;

an electroluminescent layer over the first electrode; and

a second electrode over the electroluminescent layer,

wherein the first electrode covers an edge portion of the wiring layer.

20 10. A light emitting display device according to any one of claims 6 to 9, wherein the refractory metal is selected from the group consisting of Ti (titanium), W (tungsten), Cr (chromium), Al (aluminum), Ta (tantalum), Ni (nickel), Zr (zirconium), Hf (hafnium), V (vanadium), Ir (iridium), Nb (niobium), Pd (lead), Pt (platinum), Mo (molybdenum), Co (cobalt), and Rh (rhodium).

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11. A light emitting display device according to any one of claims 1-4 and 6-9, wherein the gate electrode and the wiring layer are made of a material selected from the group consisting of silver, gold, copper, and indium tin oxide.

30 12. A light emitting display device according to any one of claims 1-4 and

6-9, wherein the semiconductor layer is a semi-amorphous semiconductor containing hydrogen and halogen and having a crystal structure.

13. A TV set including a display screen having the light emitting display  
5 device according to any one of claims 1-4 and 6-9.

14. A method for manufacturing a light emitting display device, comprising:  
forming a gate electrode over a substrate having an insulating surface with a  
substance having a photocatalytic function therebetween by a droplet discharge method;  
10 forming a gate insulating layer over the gate electrode;  
forming a semiconductor layer over the gate insulating layer;  
forming a first electrode over the gate insulating layer by a droplet discharge  
method;  
forming a wiring layer over the semiconductor layer by a droplet discharge  
15 method to cover an edge of the first electrode;  
forming a partition wall to cover the edge portion of the first electrode and the  
wiring layer;  
forming an electroluminescent layer over the first electrode; and  
forming a second electrode over the electroluminescent layer by a droplet  
20 discharge method.

15. A method for manufacturing a light emitting display device, comprising:  
forming a first electrode over a substrate having an insulating surface with a  
substance having a photocatalytic function therebetween by a droplet discharge method;  
25 forming a wiring layer over the substrate having an insulating surface with a  
substance having a photocatalytic function therebetween to cover an edge portion of the  
first electrode;  
forming a semiconductor layer over the wiring layer;  
forming a gate insulating layer over the semiconductor layer;  
30 forming a gate electrode over the gate insulating layer by a droplet discharge

method;

forming a partition wall to cover the edge portion of the first electrode and the wiring layer;

forming an electroluminescent layer over the first electrode; and

5 forming a second electrode over the electroluminescent layer by a droplet discharge method.

16. A method for manufacturing a light emitting display device, comprising:

10 forming a gate electrode over a substrate having an insulating surface with a substance having a photocatalytic function therebetween by a droplet discharge method;

forming a gate insulating layer over the gate electrode;

forming a semiconductor layer over the gate insulating layer;

forming a wiring layer over the semiconductor layer by a droplet discharge method;

15 forming a first electrode over the gate insulating layer by a droplet discharge method to cover an edge portion of the wiring layer;

forming a partition wall to cover an edge portion of the first electrode and the wiring layer;

forming an electroluminescent layer over the first electrode; and

20 forming a second electrode over the electroluminescent layer by a droplet discharge method.

17. A method for manufacturing a light emitting display device, comprising:

25 forming a wiring layer over a substrate having an insulating surface with a substance having a photocatalytic function therebetween by a droplet discharge method;

forming a first electrode over the substrate having an insulating surface with a substance having a photocatalytic function therebetween by a droplet discharge method to cover an edge portion of the wiring layer;

forming a semiconductor layer over the wiring layer;

30 forming a gate insulating layer over the semiconductor layer;

forming a gate electrode over the gate insulating layer by a droplet discharge method;

forming a partition wall to cover an edge portion of the first electrode and the wiring layer;

5        forming an electroluminescent layer over the first electrode; and

forming a second electrode over the electroluminescent layer by a droplet discharge method.

18. A method for manufacturing a light emitting display device according to  
10 any one of claims 14 to 17, wherein titanium oxide is used as the substance having a photocatalytic function.

19. A method for manufacturing a light emitting display device, comprising:  
forming a conductive layer including a refractory metal over a substrate having  
15 an insulating surface;

forming a gate electrode over the conductive layer by a droplet discharge method;

forming a gate insulating layer over the gate electrode;

forming a semiconductor layer over the gate insulating layer;

20        forming a first electrode over the gate insulating layer by a droplet discharge method;

forming a wiring layer over the semiconductor layer by a droplet discharge method to cover an edge portion of the first electrode;

forming a partition wall to cover the edge portion of the first electrode and the  
25 wiring layer;

forming an electroluminescent layer over the first electrode; and

forming a second electrode over the electroluminescent layer by a droplet discharge method.

20. A method for manufacturing a light emitting display device, comprising:  
forming a conductive layer including a refractory metal over a substrate having  
an insulating surface;  
forming a first electrode over the conductive layer by a droplet discharge  
5 method;  
forming a wiring layer over the conductive layer by a droplet discharge method  
to cover an edge portion of the first electrode;  
forming a semiconductor layer over the wiring layer;  
forming a gate insulating layer over the semiconductor layer;  
10 forming a gate electrode over the gate insulating layer by a droplet discharge  
method;  
forming a partition wall to cover the edge portion of the first electrode and the  
wiring layer;  
forming an electroluminescent layer over the first electrode; and  
15 forming a second electrode over the electroluminescent layer by a droplet  
discharge method.
21. A method for manufacturing a light emitting display device, comprising:  
forming a conductive layer including a refractory metal over a substrate having  
20 an insulating surface;  
forming a gate electrode over the conductive layer by a droplet discharge  
method;  
forming a gate insulating layer over the gate electrode;  
forming a semiconductor layer over the gate insulating layer;  
25 forming a wiring layer over the semiconductor layer by a droplet discharge  
method;  
forming a first electrode over the gate insulating layer by a droplet discharge  
method to cover an edge portion of the wiring layer;  
forming a partition wall to cover an edge portion of the first electrode and the  
30 wiring layer;



forming an electroluminescent layer over the first electrode; and  
forming a second electrode over the electroluminescent layer by a droplet discharge method.

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          forming a conductive layer including a refractory metal over a substrate having  
          an insulating surface;  
          forming a wiring layer over the conductive layer by a droplet discharge  
          method;  
10           forming a first electrode over the conductive layer by a droplet discharge  
          method to cover an edge portion of the wiring layer;  
          forming a semiconductor layer over the wiring layer;  
          forming a gate insulating layer over the semiconductor layer;  
          forming a gate electrode over the gate insulating layer by a droplet discharge  
15           method;  
          forming a partition wall to cover an edge portion of the first electrode and the  
          wiring layer;  
          forming an electroluminescent layer over the first electrode; and  
          forming a second electrode over the electroluminescent layer by a droplet  
20           discharge method.

23. A method for manufacturing a light emitting display device according to  
          any one of claims 19 to 22, wherein the refractory metal is selected from the group  
          consisting of Ti (titanium), W (tungsten), Cr (chromium), Al (aluminum), Ta (tantalum),  
25           Ni (nickel), Zr (zirconium), Hf (hafnium), V (vanadium), Ir (iridium), Nb (niobium), Pd  
          (lead), Pt (platinum), Mo (molybdenum), Co (cobalt), and Rh (rhodium).

24. A method for manufacturing a light emitting display device according to  
          any one of claims 14 to 22, wherein the gate electrode and the wiring layer are formed  
30           by using a material selected from the group consisting of silver, gold, copper, and

indium tin oxide.

25. A method for manufacturing a light emitting display device according to any one of claims 14 to 22, wherein the semiconductor layer is formed by using a  
5 semi-amorphous semiconductor containing hydrogen and halogen and having a crystal structure.